

WHAT IS CLAIMED IS:

1. An arrangement for dynamically clamping overshoot in a received signal on a signal line while not clamping the received signal at times when the overshoot is not likely encountered, the arrangement comprising:

an activation element configured to assert a Clamp Enable signal when overshoot is likely encountered in the received signal;

a deactivation element configured to assert a Clamp Disable signal when overshoot is no longer likely encountered in the received signal; and

a clamping portion configured to clamp the received signal beginning with the assertion of the Clamp Enable signal and ending with the assertion of the Clamp Disable signal.

2. An arrangement for dynamically clamping overshoot in a received signal on a signal line while not clamping the received signal at times when the overshoot is not likely encountered, the arrangement comprising:

an activation element configured to assert a Clamp Enable signal in response to a transition of the received signal;

a deactivation element configured to assert a Clamp Disable signal after the Clamp Enable signal is asserted; and

a clamping portion configured to clamp the received signal beginning with the assertion of the Clamp Enable signal and ending with the assertion of the Clamp Disable signal.

3. The arrangement of Claim 2, wherein:

the activation element is configured to assert the Clamp Enable signal in response to the transition of the received signal that occurs during a period in which a Driver Disable signal is asserted.

4. The arrangement of Claim 3, wherein:

the deactivation element includes a deactivation delay that is configured to assert a Clamp Disable signal a predetermined deactivation delay period after the Clamp Enable signal is asserted.

5. The arrangement of Claim 4, wherein:

Driver Disable signal is provided to the arrangement on a circuit card that also includes an output driver whose output is disabled by the Driver Disable signal to present a high-impedance state to the signal line so that the output driver does not affect the received signal on the signal line.

6. The arrangement of Claim 5, wherein the activation element includes stacked first and second pairs of metal oxide semiconductor field effect transistors (MOSFETs)

that collectively perform a logical AND function on the Driver Disable signal and the received signal on the signal line to form the Clamp Enable signal, wherein:

the first pair of MOSFETs is responsive to the Driver Disable signal; and

the second pair of MOSFETs is responsive to the received signal on the signal line.

7. The arrangement of Claim 6, wherein the activation element further includes:

an activation delay arrangement configured to delay an output of the first and second stacked pairs of MOSFETs so as to form the Clamp Enable signal.

8. The arrangement of Claim 5, wherein:

the clamping portion includes a diode and a switching element connected in series between a voltage supply and the signal line;

the switching element is responsive to the Clamp Enable signal to enable the diode to clamp overshoot on the signal line; and

the switching element is responsive to the Clamp Disable signal to disable the diode from clamping the signal line.

9. The arrangement of Claim 8, wherein the clamping portion further includes:

at least one switching element configured to ensure that the clamping portion does not clamp the signal line when a received signal on the signal line exceeds the voltage supply.

10. The arrangement of Claim 8, wherein the clamping portion further includes:
at least one switching element configured to ensure that the clamping portion does
not clamp the signal line when the voltage supply is zero.

11. A backplane-insertable circuit card that includes the arrangement of Claim 1.

12. A backplane-insertable circuit card that includes the arrangement of Claim 2.

13. A backplane-insertable circuit card that includes the arrangement of Claim 3.

14. A backplane-insertable circuit card that includes the arrangement of Claim 4.

15. A backplane-insertable circuit card that includes the arrangement of Claim 5.

16. A backplane-insertable circuit card that includes the arrangement of Claim 6.

17. A backplane-insertable circuit card that includes the arrangement of Claim 7.

18. A backplane-insertable circuit card that includes the arrangement of Claim 8.

19. A backplane-insertable circuit card that includes the arrangement of Claim 9.

20. A backplane-insertable circuit card that includes the arrangement of Claim 10.

21. A method of dynamically clamping overshoot in a received signal on a signal line while not clamping the received signal at times when the overshoot is not likely encountered, the arrangement comprising:

asserting a Clamp Enable signal in response to a transition of the received signal;
asserting a Clamp Disable signal after the Clamp Enable signal is asserted; and
clamping the received signal beginning with the assertion of the Clamp Enable signal and ending with the assertion of the Clamp Disable signal.

22. The method of Claim 21, wherein the step of asserting the Clamp Enable signal includes:

asserting the Clamp Enable signal in response to a transition of the received signal that occurs during a period in which a Driver Disable signal is asserted.

23. The method of Claim 22, wherein the step of asserting the Clamp Disable signal includes:

asserting the Clamp Disable signal a deactivation delay period after the Clamp Enable signal is asserted.

24. The method of Claim 23, further comprising:

ensuring that the received signal is not clamped when a voltage supply is zero.

25. The method of Claim 23, further comprising:

ensuring that the received signal is not clamped when the received signal exceeds
a non-zero voltage supply.